

STATUS OF THE SPECIFICATION

Paragraph [0071] of the specification was amended to make an obvious change. This change is obvious in view of Table 1, page 11, which specifies that the molecular weight of dispersant H is 1100 g.mol^{-1} and that the one of dispersant C is 350 g.mol^{-1} .

Applicant has amended claims 3-15 to remove all multiple dependencies. In addition, claims 1-14 have been amended to recite a method and to clarify the step of the method. Finally, new claims 16-25 depending from claim 15 have been added. New claims 16-25 parallel the method claims 1-14, and find support throughout the specification as filed.

Accordingly, Applicants do not believe any new matter has been added by these amendments.

REMARKS

Rejections under Rule 75 and Sections 101 and 112

Claims 4-15 have been objected to under 37 C.F.R. § 1.75(c) as being in improper multiple dependent form. Applicants have amended claims 3-15 to remove all multiple dependencies. Accordingly, Applicants respectfully request that the Examiner's objection be withdrawn. The Examiner has indicated that claims 4-15 were not treated on the merits due to the standing objection. Nonetheless, because claims 4-15 all ultimately depend from claim 1, Applicants believe that the remarks presented hereinbelow are applicable to each of claims 1-15 and new claims 16-25. Hence, Applicants request that in an effort to expedite issuance of the instant application, the Examiner consider each of claim 1-25 with reference to the remarks presented herein.

Claims 1-3 stand rejected under 35 C.F.R. §§ 101 and 112. The Examiner indicates that claim 1 does not properly recite a process claim. Claims 1-15 have been redrafted herein as method claims, and claims 1 and 9 have been amended to clarify the step of the method. Accordingly, Applicants respectfully request that reconsideration of the rejection of claims 1-3, leading to its withdrawal.

Rejection under Section 103

The Examiner has rejected claims 1-3 under 35 U.S.C. § 103(a) as being unpatentable over EP 1 136 507 to Widmer et al. ("Widmer"). The Examiner concedes that Widmer does not describe Applicants' invention, but contends that it would have been obvious to the person of ordinary skill in the art at the time the invention was made to modify Widmer and arrive at Applicants' invention as defined by claims 1-3. Applicants traverse and consider that the Examiner has failed to provide a proper basis for rejecting Applicants' claims 1-3 over Widmer. Applicants also traverse believing that Widmer in any event fails to teach or suggest in any manner the two elements of Applicants' invention asserted by the Examiner. Finally, notwithstanding the improper rejection of claims 1-3 under Section 103(a), Applicants rebut the rejection based on the unexpected properties shown by the invention as defined by claims 1-25.

In rejecting Applicant's claims, the Examiner jumps to the unsupported conclusion that "[i]t is obvious to choose the portions of the ranges so that monomer 1 and monomer 2 are present [*sic*] at least 75%," apparently relying on Widmer's disclosure at paragraph 24. In addition, the Examiner further concludes, again without support, that "[i]t is also obvious to choose the portions of the ranges so that the ratio of the number of monomer units 2 to the total number of 1 and 2 is between 20 and 80%," apparently again relying on Widmer's disclosure at paragraph 24. Finally, the Examiner states "that adjusting slump to a desired value is a routine measure for a person skilled in the art to take (by adjusting the amount of dispersing agent and/or the w:c ratio)." Armed with these two unsupported conclusions, and the apparent blessing of the International Preliminary Report on Patentability, the Examiner concludes, "Since the weight ratio and monomers are the same the composition will inherently have fluidity retention up to 90 minutes."

It appears that the Examiner is attempting to support the conclusions of obviousness based on the unrelated parameters of the amount of dispersing agent and the w:c ratio. However, Applicants respectfully point out that the Examiner's conclusions do not follow from any logical reasoning. Specifically, the Examiner's contention that "adjusting the amount of dispersing agent and/or the w:c ratio" is somehow routine is inapposite to the question of whether Widmer's disclosure of its monomer 1 and 2 renders Applicants' claims obvious. The selection of a

particular amount of either the dispersing agent or the w:c ratio is not relevant to the Examiner's unsupported conclusions that the person of ordinary skill in the art would select Applicants' claimed range of monomer 2 and Applicants claimed minimum of the total of monomers 1 and 2. Applicants respectfully point out that the rejected claims do not recite any particular amount of either the dispersing agent or the w:c ratio.

Returning to the Examiner's unsupported conclusions, the Examiner indicates that Widmer discloses that monomer 1 must be present between 10% and 90% (referring to Widmer, at paragraph 24). However, the Examiner errs in stating that Widmer teaches monomer 2 may be present between 10% and 80%. Upon a careful reading of Paragraph 24, it is clear that Widmer teaches that monomer 2 must be present between 1% and 80%. In addition, Widmer teaches that monomer 4 must be present between 0.1% and 30%. Moreover, Widmer teaches two other optional monomers 3 and 5 which may be present in as much as 80% and 50%, respectively (Widmer, at paragraph 24). Presumably based on that disclosure at Paragraph 24, the Examiner makes the unsupported conclusion that "[i]t is obvious to choose the portions of the ranges so that monomer 1 and monomer 2 are present [*sic*] at least 75%." Applicants respectfully disagree. The ranges recited by Widmer only indicate that the total of monomers 1 and 2 may be as low as 11% (i.e., 10% monomer 1 and 1% monomer 2), or as high as 99.9% (e.g., 90% monomer 1 and 9.9% monomer 2, or 19.9% monomer 1 and 80% monomer 2) of the total. The Examiner has not pointed to any teaching or suggestion, nor to any reasoned basis that would motivate the person of ordinary skill in the art to abandon the teachings of Widmer and arbitrarily select a total monomer count of monomer 1 and 2 of at least 75%, as required by claim 1.

Undeterred, and again without support, the Examiner further concludes that "[i]t is also obvious to choose the portions of the ranges so that the ratio of the number of monomer units 2 to the total number of 1 and 2 is between 20 and 80%," apparently again relying on Widmer's disclosure at paragraph 24. As stated above, Widmer discloses that monomer 1 must present between 10% and 90% and monomer 2 must be present between 1% and 80%. Accordingly, the ratio of monomer 2 to the total of 1 and 2 may be as low as 1% (i.e., 1% monomer 2 and 90% monomer 1), or as high as 89% (i.e., 80% monomer 1 and 10% monomer 2). Identical to the first unsupported conclusion, the Examiner has not pointed to any teaching or suggestion, nor to

any reasoned basis that would motivate the person of ordinary skill in the art to abandon the teachings of Widmer and arbitrarily select a ratio of monomer 2 to the total of monomers 1 and 2 to be in the range between 20 and 80%, as required in claim 1.

Moreover, overwhelming the logical departures by the Examiner in the two foregoing paragraphs, Applicants respectfully point out that Widmer's mixed monomers 1 and 2 are not the same as Applicants' acrylate monomers 1 and 2, respectively. Importantly, Widmer does not distinguish between acrylate monomers and methacrylate monomers. Thus, Widmer's monomers 1 and 2 may be 100% methacrylate, 100% acrylate, or any mixture in-between. In contrast, Applicants' claimed relative range of acrylate monomer 2 and Applicants claimed minimum of total acrylate monomers 1 and 2 do not include methacrylate. In particular, instant claim 1 allows for a maximum of 25% of any other monomer, including methacrylate monomer units, while claim 2 allows for only a maximum of 20% of any other monomer, including methacrylate monomer units.

Accordingly, revisiting the Examiners assertions of obviousness above, Widmer's disclosure actually indicates that the total of acrylate monomers 1 and 2 may be as low as 0% (i.e., only methacrylate monomers 1 and 2), or as high as 99.9% (e.g., 90% monomer 1 and 9.9% monomer 2, as before) of the total. Similarly, Widmer's disclosure also actually indicates that the ratio of acrylate monomer 2 to the total of acrylate monomers 1 and 2 may be as low as 0% (i.e., 0% acrylate monomer 2), or as high as 100% (i.e., 0% acrylate monomer 1 and 80% acrylate monomer 2). The relevant disclosure by Widmer of a range of 0% to 99.9% for the total of monomers 1 and 2 cannot be fairly characterized as rendering obvious Applicants recited value of at least 75%. Similarly, the relevant disclosure by Widmer of a range of 0% to 100% for the ratio of monomer 2 to the total of monomers 1 and 2 cannot be fairly characterized as rendering obvious Applicants recited range of 20% to 80%. In fact, disclosing a range that spans 0% to 100% teaches nothing.

Simply stated, Applicants believe that the Examiner has done nothing more than impermissibly arrive at Applicants' invention using hindsight construction. First, the Examiner has cherry-picked Applicants' claimed acrylates from the undifferentiated monomer units of Widmer without any rational basis. Second, the Examiner has arbitrarily selected Applicants

claimed minimum of total monomer 1 and monomer 2 from the broad range of 0% to 99.9% disclosed by Widmer, again without any rational basis. Finally, the Examiner has without any rational basis selected Applicants claimed relative ratio of monomer 1 to the total of monomer 1 and 2 from the broad range of 0% to 100% recited by Widmer. Widmer does not suggest any of those claimed elements, and the Examiner has not proffered any reasoned basis as to why the person of ordinary skill in the art would deviate from Widmer and arrive at Applicants' invention.

Notwithstanding the foregoing failure to arrive at Applicants claimed relative range of monomer 2 and Applicants claimed minimum of the total of monomers 1 and 2, the Examiner has failed to meet the burden of production vis-à-vis the remaining elements defining claim 1. In order for a rejection under Section 103(a) of the Patent Law to stand, the Examiner must find in the prior art, either alone or in combination, each and every element of claim. Section 103(a) states (in part):

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

(35 U.S.C. § 103(a) (emphasis added)). Applicants respectfully point out that claim 1 also requires that the integer n is between 0 and 24, that the integer m is between 0 and 24, and that the integer m is less than the integer n. In addition, Applicants' claims also require that the group R is "an alkyl or alkenyl group having from 1 to 24 carbon atoms." The Examiner has not provided any teaching or suggestion of those terms in any context from any relied upon reference. Accordingly, Applicants respectfully aver that the Examiner has not met the requirements necessary to maintain a proper rejection of any of claims 1-15 under Section 103(a).

Even so, in an effort to expedite issuance, Applicants note that Widmer fails to teach those features. For example, Widmer discloses R³ (corresponding to Applicants' group R) as being "C₁-C₄-alkyl rest" (Widmer, at paragraph 24). Similarly, Widmer discloses x (corresponding to the sum of Applicants' groups n and m) as being "from 2-300" (Widmer, at

paragraph 24). Neither of those recitations by Widmer arrive at Applicants' claim terms. In addition, Widmer is silent to any relative proportion of ethylene to propylene in monomer 2, and instead recites a single value for the total of the two glycol components in integer x.

Rebuttal of Non-obviousness Rejection

Regardless of the missing elements identified above, and of the lack of a reasoned basis for why the skilled person would modify Widmer to arrive at Applicants' invention, Applicants assert that the obvious rejection is rebutted by the showing of unexpected properties of the claimed dispersants requiring at least 75% total acrylate monomer, and a ratio of acrylate monomer 2 to total acrylate monomer in the range between 20% and 80%.

The question of nonobviousness must turn on whether the *prima facie* case of obviousness of the claimed composition is rebutted by a showing of unexpected results. *In re Diamond*, 53 CCPA 1172, 360 F.2d 214, 149 USPQ 562 (1966). *In re Meinhardt*, 55 CCPA 1000, 392 F.2d 273, 157 USPQ 270 (1968). The Federal Circuit in *In re Dillon* concluded that a *prima facie* case of obviousness can be rebutted by "showing that the claimed compositions possess *unexpectedly improved properties or properties that the prior art does not have*" (919 F.2d 688, 692, 16 U.S.P.Q. 2d 1897, 1901 (Fed. Cir. 1990) (emphasis added)).

Applicants respectfully refer the Examiner to Tables 2 and 3 of the specification as filed, and in particular to the Examples A-F and comparative Example G (comprising more than 25% methacrylate monomers). Those Tables indicate that when the dispersant does not have at least 75% total acrylate monomer, and a ratio of acrylate monomer 2 to total acrylate monomer in the range between 20% and 80%, the concrete composition does not possess fluidity retention up to 90 minutes. In particular, Tables 2 and 3 show that the slump value of Example G (comprising more than 25% methacrylate monomers) measured at 90 minutes (T90) is less than 60% of the slump value measured in the fresh state (T0). That lack of fluidity retention is observed in two different concrete compositions. In contrast, Tables 2 and 3 show that the slump values of Examples A-F measured at 90 minutes (T90) are all greater than 60%, and in most cases greater than 80%, of the T0 slump value. Importantly, that improved fluidity retention is also observed in two different concrete base compositions.

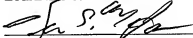
Accordingly, even if the Examiner has made a *prima facie* case of obviousness, and Applicants contend that the Examiner has not, the Applicants have rebutted the Examiner's *prima facie* case by demonstrating that Applicants' claimed compounds have unexpectedly improved properties that the prior art does not have. Hence, Applicants respectfully request that the rejection of claims 1-15 as being obvious over Widmer be reconsidered leading to its withdrawal.

Conclusion

Applicants have redrafted and amended claims 1-15 addressing the Examiner's Rule 75 objection and rejections under Sections 101 and 112. Applicants also believe that the Examiner has failed to construct a proper *prima facie* basis for rejecting Applicants claims 1-3 under Section 103(a) over Widmer at the outset, and in any event that the Examiner's rejection is rebutted by the unexpected properties possessed by the claimed invention. Because claims 4-25 each ultimately depend from claim 1, Applicants consider that Widmer is equally insufficient to render those claims obvious for the above-stated reasons. Hence, Applicants believe that the foregoing remarks are fully responsive to the rejections and objections articulated in the Office action, and respectfully request reconsideration of all standing objections and rejections leading to their withdrawal. Applicants believe that claims 1-25 are now in condition for allowance and respectfully request that the Examiner pass the application to issue. Should the Examiner require any clarification of the foregoing remarks or amendments, Applicant invite the Examiner to contact the undersigned by electronic mail (kmclaren@btlaw.com) or by telephone (317-231-7776) to expedite the prosecution of the subject application.

Respectfully submitted,

BARNES & THORNBURG LLP



Kevin L. McLaren, Reg. No. 48351
One of the Attorneys for Applicant(s)
P.O. Box 2786
Chicago, Illinois 60690-2786
Phone: 312-357-1313
Facsimile: 312-759-5646
Customer No.: 23644

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